DOCUMENT RESUME

ED 439 937 SE 063 368

TITLE	Excellence in Environmental Education--Guidelines for Learning (K-12). Executive Summary and Self Assessment Tool. National Project for Excellence in Environmental Education.
INSTITUTION	North American Association for Environmental Education, Rock Spring, GA.
SPONS AGENCY	Environmental Protection Agency, Washington, DC.; Northern Illinois Univ., De Kalb.; National Environmental Education and Training Foundation, Washington, DC.
ISBN	ISBN-1-884008-77-1
PUB DATE	1999-00-00
NOTE	36p.; For another document from the National Project for Excellence in Environmental Education, see SE 063 367.
CONTRACT	EPA-NT902897-01-1
AVAILABLE FROM	NAAEE Publications and Membership Office, 410 Tarvin Road, Rock Spring, GA 30739. Tel: 706-764-2926; Fax: 706-764-2094; e-mail: csmith409@aol.com; Web site: http://www.naaee.org.
PUB TYPE	Guides - Classroom - Teacher (052) -- Tests/Questionnaires (160)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Elementary Secondary Education; *Environmental Education; *Evaluation; *Guidelines; *Scientific Literacy; Teaching Methods

ABSTRACT

This document is the companion publication to "Excellence in Environmental Education: Guidelines for Learning (K-12)", published by the North American Association for Environmental Education (NAAEE) as part of the National Project for Excellence in Environmental Education. The Guidelines are organized into four strands, each of which represents a broad aspect of environmental education and the goal of environmental literacy. This guide provides an overview for becoming familiar with the four strands and a set of self assessment checklists for analyzing the degree to which various curricula and educational programs meet the Guidelines. The four strands include: (1) Questioning and Analysis Skills; (2) Knowledge of Environmental Processes and Systems; (3) Skills for Understanding and Addressing Environmental Issues; and (4) Personal and Civic Responsibility. The Guidelines describe a level of skill or knowledge appropriate for each of three grade levels--fourth, eighth, and twelfth. (CCM)

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ED 439 937

Excellence in Environmental Education—Guidelines for Learning (K-12)

Executive Summary & Self Assessment Tool

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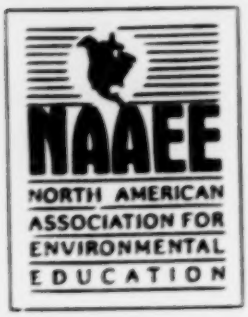

The North American Association for Environmental Education (NAAEE) is a network of professionals and students working in the field of environmental education throughout North America and in over 50 countries around the world. For more than 25 years, the Association has promoted environmental education and supported the work of environmental educators.

There are many environmental interest groups and many organizations dedicated to the improvement of education. NAAEE integrates these perspectives and takes a positive, cooperative, non-confrontational approach to promoting education about environmental issues.

The Association is made up of people who have thought seriously—over lifetimes—about how people become literate concerning environmental issues. NAAEE members believe education must go beyond consciousness-raising. It must prepare people to think together about the difficult decisions they have to make regarding environmental stewardship, and to work together to improve and solve environmental problems.

NAAEE recognizes the need for a coherent body of information about environmental issues. Its members also recognize that information and analysis are only part of an effective education program. To be truly effective, this body of knowledge must be integrated into all aspects of the curriculum and into all types of educating institutions for the widest array of audiences.

In order to translate theory into reality and provide tangible support for environmental education and environmental educators, NAAEE engages in a variety of programs and activities: an annual conference at varying North American sites; an active publications program; the Environmental Education Training Institute; the VINE (Volunteer-led Investigations of Neighborhood Ecology) Network; the Environmental Issues Forums (EIF) program; NAAEE Skills Bank; and the Environmental Education and Training Partnership (EETAP).

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Excellence in Environmental Education—Guidelines for Learning (K-12)

Executive Summary & Self Assessment Tool

North American Association for Environmental Education

The Excellence in Environmental Education—Guidelines for Learning (K-12) Executive Summary and Self Assessment Tool represents another in a series of documents published by the North American Association for Environmental Education as part of the National Project for Excellence in Environmental Eduation.

National Project for Excellence in Environmental Education

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Acknowledgements

The Excellence in Environmental Education—Guidelines for Learning (K-12) Executive Summary and Self Assessment Tool was funded by the United States Environmental Protection Agency through the Environmental Education and Training Partnership (EETAP) under agreement number EPA-NT902897-01-1 with the North American Association for Environmental Education.

Additional funding and support for this project have been received from Northern Illinois University and the National Environmental Education and Training Foundation.

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ISBN # 1-884008-77-1

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Excellence in Environmental Education—
Guidelines for Learning (K-12)
Executive Summary & Self Assessment Tool

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Introduction

Welcome! *Excellence in Environmental Education—Guidelines for Learning (K-12)* (NAAEE, 1999) offers a vision of environmental education and promotes progress toward sustaining a healthy environment and quality of life. The *Guidelines* provide students, parents, educators, home schoolers, administrators, policy makers, and the public a set of common, voluntary guidelines for environmental education. The *Guidelines* support state and local environmental education efforts by:

- Setting expectations for performance and achievement in fourth, eighth, and twelfth grades;
- Suggesting a framework for effective and comprehensive environmental education programs;
- Demonstrating how environmental education can be used to meet standards set by the traditional disciplines and to give students opportunities to synthesize knowledge and experience across disciplines;
- Defining the aims of environmental education.

The *Guidelines* are organized into four strands, each of which represents a broad aspect of environmental education and its goal of environmental literacy. To help you use the *Guidelines* most effectively, this document, *Excellence in Environmental Education—Guidelines for Learning (K-12) Executive Summary and Self Assessment Tool*, has been developed. It provides you with:

- An overview for becoming familiar with the four strands and how they become more sophisticated at higher grade levels;
- A set of self assessment checklists for analyzing the degree to which your various curricula and educational programs may meet the *Guidelines*.

Although the Executive Summary and the Self Assessment Tool can be used separately, they were designed to be used together as a means of gaining a general understanding of the *Guidelines* and how they can help you develop a comprehensive, cohesive environmental education program.

Executive Summary

The Executive Summary can be used as an easy reference to *Excellence in Environmental Education—Guidelines for Learning (K-12)* (NAAEE 1999). As in the full document, the Executive Summary is organized into four strands, each of which is further delineated by a set of guidelines that describe a level of skill or knowledge appropriate for each of three grade levels - fourth, eighth, and twelfth. In the Executive Summary, guidelines for a particular strand are arranged on two-page layouts, so that the user can quickly understand the flow of guidelines at a grade level or compare how guidelines progress across the grade levels. It should be remembered that the Executive Summary is designed to provide only an overview. For a more in-depth view of the strands and their guidelines, it will be necessary to refer to *Excellence in Environmental Education—Guidelines for Learning (K-12)*.

OVERVIEW

FOURTH GRADE

Learners should be able to meet the guidelines included in this section by the end of fourth grade.

The kindergarten through fourth grade years are a time of tremendous cognitive development. By third and fourth grades, learners have developed some basic skills that help them construct knowledge. Instructors in earlier grade levels should use these fourth grade guidelines as a target, extrapolating from this end goal appropriate activities and lessons for younger learners.

In these early years of formal education, learners tend to be concrete thinkers with a natural curiosity about the world around them. Environmental education can build on these characteristics by focusing on observation and exploration of the environment—beginning close to home.

EIGHTH GRADE

Learners should be able to meet the guidelines included in this section by the end of eighth grade.

In the fifth through eighth grades, learners develop greater skills in abstract and creative thinking—and along with these, the ability to understand the interplay of environmental and human systems in greater depth. Environmental education can foster this development by focusing on investigation of local environmental systems, problems, and issues. As learners become actively engaged in deciding for themselves what is right and wrong, educators can use environmental problems to help learners explore their own responsibilities and ethics.

TWELFTH GRADE

Learners should be able to meet the guidelines included in this section by the time they graduate from high school.

By the end of twelfth grade, learners are well on their way to environmental literacy. They should possess the basic skills and dispositions they need to understand and act on environmental problems and issues as responsible citizens—and to continue the learning process throughout their lives. In the ninth through twelfth grades, environmental education can promote active and responsible citizenship by challenging learners to hone and apply problem-solving, analysis, persuasive communication, and other higher level skills—often in real-world contexts.

STRAND 1—
Questioning and Analysis Skills

FOURTH GRADE

A) Questioning—Learners are able to develop questions that help them learn about the environment and do simple investigations.

B) Designing investigations—Learners are able to design simple investigations.

C) Collecting information—Learners are able to locate and collect information about the environment and environmental topics.

D) Evaluating accuracy and reliability—Students understand the need to use reliable information to answer their questions. They are familiar with some basic factors to consider in judging the merits of information.

E) Organizing information—Learners are able to describe data and organize information to search for relationships and patterns concerning the environment and environmental topics.

F) Working with models and simulations—Learners understand that relationships, patterns, and processes can be represented by models.

G) Developing explanations—Learners can develop simple explanations that address their questions about the environment.

EIGHTH GRADE	TWELFTH GRADE
A) Questioning—Learners are able to develop, focus, and explain questions that help them learn about the environment and do environmental investigations.	**A) Questioning**—Learners are able to develop, modify, clarify, and explain questions that guide environmental investigations of various types. They understand factors that influence the questions they pose.
B) Designing investigations—Learners are able to design environmental investigations to answer particular questions—often their own questions.	**B) Designing investigations**—Learners know how to design investigations to answer particular questions about the environment. They are able to develop approaches for investigating unfamiliar types of problems and phenomena.
C) Collecting information—Learners are able to locate and collect reliable information about the environment or environmental topics using a variety of methods and sources.	**C) Collecting information**—Learners are able to locate and collect reliable information for environmental investigations of many types. They know how to use sophisticated technology to collect information, including computer programs that access, gather, store, and display data.
D) Evaluating accuracy and reliability—Students are able to judge the weaknesses and strengths of the information they are using.	**D) Evaluating accuracy and reliability**—Learners can apply basic logic and reasoning skills to evaluate completeness and reliability in a variety of information sources.
E) Organizing information—Learners are able to classify and order data, and to organize and display information in ways that help analysis and interpretation.	**E) Organizing information**—Learners are able to organize and display information in ways appropriate to different types of environmental investigations and purposes.
F) Working with models and simulations—Learners understand many of the uses and limitations of models.	**F) Working with models and simulations**—Learners are able to create, use, and evaluate models to understand environmental phenomena.
G) Developing proposed explanations—Learners are able to synthesize their observations and findings into coherent explanations.	**G) Developing proposed explanations**—Learners are able to use evidence and logic in developing proposed explanations that address their initial questions and hypotheses.

STRAND 2— Knowledge of Environmental Processes and Systems	FOURTH GRADE
STRAND 2.1— The Earth as a Physical System	**A) Processes that shape the Earth—** Learners are able to identify changes and differences in the physical environment.
	B) Changes in matter—Learners are able to identify basic characteristics of and changes in matter.
	C) Energy—While they may have little understanding of formal concepts associated with energy, learners are familiar with the basic behavior of some different forms of energy.
STRAND 2.2— The Living Environment	**A) Organisms, populations, and communities**—Learners understand basic similarities and differences among a wide variety of living organisms. They understand the concept of habitat.
	B) Heredity and evolution—Learners understand that plants and animals have different characteristics and that many of the characteristics are inherited.
	C) Systems and connections—Learners understand basic ways in which organisms are related to their environments and to other organisms.
	D) Flow of matter and energy—Learners know that living things need some source of energy to live and grow.

EIGHTH GRADE	TWELFTH GRADE
A) Processes that shape the Earth—Learners have a basic understanding of most of the physical processes that shape the Earth. They are able to explore the origin of differences in physical patterns.	**A) Processes that shape the Earth**—Learners understand the major physical processes that shape the Earth. They can relate these processes, especially those that are large-scale and long-term, to characteristics of the Earth.
B) Changes in matter—Learners understand the properties of the substances that make up objects or materials found in the environment.	**B) Changes in matter**—Learners apply their understanding of chemical reactions to round out their explanations of environmental characteristics and everyday phenomena.
C) Energy—Students begin to grasp formal concepts related to energy by focusing on energy transfer and transformations. They are able to make connections among phenomena such as light, heat, magnetism, electricity, and the motion of objects.	**C) Energy**—Learners apply their knowledge of energy and matter to understand phenomena in the world around them.
A) Organisms, populations, and communities—Learners understand that biotic communities are made up of plants and animals that are adapted to live in particular environments.	**A) Organisms, populations, and communities**—Learners understand basic population dynamics and the importance of diversity in living systems.
B) Heredity and evolution—Learners have a basic understanding of the importance of genetic heritage.	**B) Heredity and evolution**—Learners understand the basic ideas and genetic mechanisms behind biological evolution.
C) Systems and connections—Learners understand major kinds of interactions among organisms or populations of organisms.	**C) Systems and connections**—Learners understand the living environment to be comprised of interrelated, dynamic systems.
D) Flow of matter and energy—Learners understand how energy and matter flow among the abiotic and biotic components of the environment.	**D) Flow of matter and energy**—Learners are able to account for environmental characteristics based on their knowledge of how matter and energy interact in living systems.

STRAND 2— Knowledge of Environmental Processes and Systems	FOURTH GRADE
STRAND 2.3— Humans and Their Societies	**A) Individuals and groups**—Learners understand that people act as individuals and as group members and that groups can influence individual actions. **B) Culture**—Learners understand that experiences and places may be interpreted differently by people with different cultural backgrounds, at different times, or with other frames of reference. **C) Political and economic systems**—Learners understand that government and economic systems exist because people living together in groups need ways to do things such as provide for needs and wants, maintain order, and manage conflict. **D) Global connections**—Learners understand how people are connected at many levels—including the global level—by actions and common responsibilities that concern the environment. **E) Change and conflict**—Learners recognize that change is a normal part of individual and societal life. They understand that conflict is rooted in different points of view.

EIGHTH GRADE	TWELFTH GRADE
A) Individuals and groups—Learners understand that how individuals perceive the environment is influenced in part by individual traits and group membership or affiliation.	**A) Individuals and groups**—Learners understand the influence of individual and group actions on the environment, and how groups can work to promote and balance interests.
B) Culture—As they become familiar with a wider range of cultures and subcultures, learners gain an understanding of cultural perspectives on the environment and how the environment may, in turn, influence culture.	**B) Culture**—Learners understand cultural perspectives and dynamics and apply their understanding in context.
C) Political and economic systems—Learners become more familiar with political and economic systems and how these systems take the environment into consideration.	**C) Political and economic systems**—Learners understand how different political and economic systems account for, manage, and affect natural resources and environmental quality.
D) Global connections—Learners become familiar with ways in which the world's environmental, social, economic, cultural, and political systems are linked.	**D) Global connections**—Learners are able to analyze global social, cultural, political, economic, and environmental linkages.
E) Change and conflict—Learners understand that human systems change over time and that conflicts sometimes arise over differing and changing viewpoints about the environment.	**E) Change and conflict**—Learners understand the functioning of public processes for promoting and managing change and conflict, and can analyze their effects on the environment.

STRAND 2— Knowledge of Environmental Processes and Systems	FOURTH GRADE
STRAND 2.4— Environment and Society	**A) Human/environment interactions**—Learners understand that people depend on, change, and are affected by the environment.
	B) Places—Learners understand that places differ in their physical and human characteristics.
	C) Resources—Learners understand the basic concepts of resource and resource distribution.
	D) Technology—Learners understand that technology is an integral part of human existence and culture.
	E) Environmental issues—Learners are familiar with some local environmental issues and understand that people in other places experience environmental issues as well.

EIGHTH GRADE	TWELFTH GRADE
A) Human/environment interactions—Learners understand that human-caused changes have consequences for the immediate environment as well as for other places and future times.	**A) Human/environment interactions**—Learners understand that humans are able to alter the physical environment to meet their needs and that there are limits to the ability of the environment to absorb impacts or meet human needs.
B) Places—Learners begin to explore the meaning of places both close to home and around the world.	**B) Places**—Learners understand "place" as humans endowing a particular part of the Earth with meaning through their interactions with that environment.
C) Resources—Learners understand that uneven distribution of resources influences their use and perceived value.	**C) Resources**—Learners understand that the importance and use of resources change over time and vary under different economic and technological systems.
D) Technology—Learners understand the human ability to shape and control the environment as a function of the capacities for creating knowledge and developing new technologies.	**D) Technology**—Learners are able to examine the social and environmental impacts of various technologies and technological systems.
E) Environmental issues—Learners are familiar with a range of environmental issues at scales that range from local to national to global. They understand that people in other places around the world share many of the issues they are concerned about locally.	**E) Environmental issues**—Learners are familiar with a range of environmental issues at scales that range from local to national to global. They understand that these scales and issues are often linked.

STRAND 3— Skills for Understanding and Addressing Environmental Issues	FOURTH GRADE
STRAND 3.1— **Skills for Analyzing and Investigating Environmental Issues**	**A) Identifying and investigating issues**—Learners are able to identify and investigate issues in their local environments and communities. **B) Sorting out the consequences of issues**—As students come to understand that environmental and social phenomena are linked, they are able to explore the consequences of issues. **C) Identifying and evaluating alternative solutions and courses of action**—Students understand there are many approaches to resolving issues. **D) Working with flexibility, creativity, and openness**—Learners understand the importance of sharing ideas and hearing other points of view.
STRAND 3.2— **Decision-Making and Citizenship Skills**	**A) Forming and evaluating personal views**—Learners are able to examine and express their own views on environmental issues. **B) Evaluating the need for citizen action**—Learners are able to think critically about whether they believe action is needed in particular situations and whether they believe they should be involved. **C) Planning and taking action**—By participating in issues of their choosing—mostly close to home—students learn the basics of individual and collective action. **D) Evaluating the results of actions**—Learners understand that civic actions have consequences.

EIGHTH GRADE	TWELFTH GRADE
A) Identifying and investigating issues—Learners are able to use primary and secondary sources of information, and apply growing research and analytical skills, to investigate environmental issues, beginning in their own community.	**A) Identifying and investigating issues**—Learners apply their research and analytical skills to investigate environmental issues ranging from local issues to those that are regional or global in scope.
B) Sorting out the consequences of issues—Learners are able to apply their knowledge of ecological and human processes and systems to identify the consequences of specific environmental issues.	**B) Sorting out the consequences of issues**—Learners are able to evaluate the consequences of specific environmental changes, conditions, and issues for human and ecological systems.
C) Identifying and evaluating alternative solutions and courses of action—Learners are able to identify and develop action strategies for addressing particular issues.	**C) Identifying and evaluating alternative solutions and courses of action**—Learners are able to identify and propose action strategies that are likely to be effective in particular situations and for particular purposes.
D) Working with flexibility, creativity, and openness—Students are able to consider the assumptions and interpretations that influence the conclusions they and others draw about environmental issues.	**D) Working with flexibility, creativity, and openness**—While environmental issues investigations can bring to the surface deeply held views, learners are able to engage each other in peer review conducted in the spirit of open inquiry.
A) Forming and evaluating personal views—Students are able to identify, justify, and clarify their views on environmental issues and alternative ways to address them.	**A) Forming and evaluating personal views**—Students are able to communicate, evaluate, and justify their own views on environmental issues and alternative ways to address them.
B) Evaluating the need for citizen action—Learners are able to evaluate whether they believe action is needed in particular situations, and decide whether they should be involved.	**B) Evaluating the need for citizen action**—Learners are able to decide whether action is needed in particular situations and whether they should be involved.
C) Planning and taking action—As students begin to see themselves as citizens taking active roles in their communities, they are able to plan for and engage in citizen action at levels appropriate to their maturity and preparation.	**C) Planning and taking action**—Learners know how to plan for action based on their research and analysis of an environmental issue. If appropriate, they take actions that are within the scope of their rights and consistent with their abilities and responsibilities as citizens.
D) Evaluating the results of actions—Learners are able to analyze the effects of their own actions and actions taken by other individuals and groups.	**D) Evaluating the results of actions**—Learners are able to evaluate the effects of their own actions and actions taken by other individuals and groups.

STRAND 4— Personal and Civic Responsibility	FOURTH GRADE
	A) Understanding societal values and principles—Learners can identify fundamental principles of U.S. society and explain their importance in the context of environmental issues.
	B) Recognizing citizens' rights and responsibilities—Learners understand the basic rights and responsibilities of citizenship.
	C) Recognizing efficacy—Learners possess a realistic self-confidence in their effectiveness as citizens.
	D) Accepting personal responsibility—Learners understand that they have responsibility for the effects of their actions.

EIGHTH GRADE	TWELFTH GRADE
A) Understanding societal values and principles—Learners understand that societal values can be both a unifying and a divisive force.	**A) Understanding societal values and principles**—Learners know how to analyze the influence of shared and conflicting societal values.
B) Recognizing citizens' rights and responsibilities—Learners understand the rights and responsibilities of citizenship and their importance in promoting the resolution of environmental issues.	**B) Recognizing citizens' rights and responsibilities**—Learners understand the importance of exercising the rights and responsibilities of citizenship.
C) Recognizing efficacy—Learners possess a realistic self-confidence in their effectiveness as citizens.	**C) Recognizing efficacy**—Learners possess a realistic self-confidence in their effectiveness as citizens.
D) Accepting personal responsibility—Learners understand that their actions can have broad consequences and that they are responsible for those consequences.	**D) Accepting personal responsibility**—Learners understand that their actions can have broad consequences and accept responsibility for recognizing those effects and changing their actions when necessary.

Self Assessment Tool

The *Excellence in Environmental Education—Guidelines for Learning (K-12)* describes what learners should know and be able to do when they have successfully completed a comprehensive, multidisciplinary environmental education program. Many of us know we do not yet have such a program for our students, but would like to know how we are doing and how far we have come. In other words, we want to assess the program elements we currently deliver, see the degree to which they provide a comprehensive set of learning experiences, and determine where the gaps are.

The following checklists were developed to enable educators to assess their environmental education programs. School administrators, classroom teachers, and environmental educators in other settings may use them to find out whether they are providing students with the entire array of K-12 learning experiences that will enable them to become environmentally literate.

We do not expect any one program to fully address all of the guidelines. For example, a nature center that provides school programs may find that their programs concentrate on developing student knowledge and skills in only one or two strands. A school district may use this tool to determine the guidelines that are entirely addressed through their classroom curricula and those that are best delivered in collaboration with community-based institutions.

We hope that you will use these checklists to identify the areas you feel you are fully addressing and then will ask yourself:

> Are there other places or teachers that provide these students with appropriate learning opportunities in the strands that we do not, and if not, should we or other partners in our community take on those challenges to enable all learners to get a more complete environmental education?

As noted at the beginning of each of the checklists, reading the entire entry for a guideline in the volume entitled *Excellence in Environmental Education—Guidelines for Learning (K-12)* will give you a deeper understanding of the concepts and skills students are expected to develop and some specific examples of ways in which learner achievement might be demonstrated. We believe you will want to use that document and these checklists together, referring back and forth from one to the other.

Excellence in Environmental Education—Guidelines for Learning
K-4th Grade Self Assessment Tool

PLEASE NOTE: For more detailed information about the guidelines briefly listed below, see pages 10-28 of *Excellence in Environmental Education—Guidelines for Learning (K-12)* produced by the North American Association for Environmental Education.

Check the appropriate column to indicate the degree to which your program(s) address each item. **Our program provides K-4 students with learning experiences so that by the time they finish 4th grade they are able to. . .**	Yes - fully addressed	Partly addressed	No - not addressed
Strand 1—Questioning and Analysis Skills			
A. Generate and develop questions that are appropriate for initiating inquiry.			
B. Design simple investigations.			
C. Locate and collect information about the environment and environmental topics from a variety of sources.			
D. Understand the need to use reliable information and explain some of the factors to consider in judging the merits of the information they are using.			
E. Describe data and organize information to show relationships and patterns.			
F. Work with models and simulations, using them to describe relationships, patterns, and processes.			
G. Describe their observations and develop simple explanations.			
Strand 2—Knowledge of Environmental Processes and Systems **2.1—The Earth as a Physical System**			
A. Identify and explain changes and differences in the physical environment.			
B. Identify and describe basic characteristics of and changes in matter.			
C. Describe the basic sources and uses of some different forms of energy (light, heat, etc.).			

Check the appropriate column to indicate the degree to which your program(s) address each item. **Our program provides K-4 students with learning experiences so that by the time they finish 4th grade they are able to. . .**	Yes - fully addressed	Partly addressed	No - not addressed
2.2—The Living Environment			
A. Identify similarities and differences among a wide variety of living organisms; describe organisms' basic needs, habitats, and ways organisms meet their needs in different habitats.			
B. Explain that both plants and animals have different characteristics and that many of the characteristics are inherited from their parents.			
C. Explain basic ways in which organisms are related to their environments and to other organisms.			
D. Explain that living things need some source of "energy" to live and grow and that matter is recycled—e.g., through life, growth, death, and decay.			
2.3—Humans and Their Societies			
A. Identify ways that people act as individuals and as group members, and give examples of ways groups influence individual actions.			
B. Give examples of how experiences and places may be interpreted differently by people with different cultural backgrounds, at different times, or with other frames of reference.			
C. Describe government and economic systems that exist because people living together in groups need ways to do things (such as provide for needs and wants, maintain order, and manage conflict).			
D. Understand how people are connected at many levels—including the global level—by actions and common responsibilities that concern the environment.			
E. Recognize that change is a normal part of individual and societal life and that conflict is rooted in different points of view.			

Check the appropriate column to indicate the degree to which your program(s) address each item. **Our program provides K-4 students with learning experiences so that by the time they finish 4th grade they are able to. . .**	Yes - fully addressed	Partly addressed	No - not addressed
2.4—Environment and Society			
A. Identify ways people depend on, change, and are affected by the environment.			
B. Describe ways places differ in their physical and human characteristics.			
C. Demonstrate an understanding of "resources" and describe various sources and origins of resources they use in their lives.			
D. Understand that technology is an integral part of human existence and culture.			
E. Identify and describe a range of local environmental issues and understand that people in other places also experience environmental issues.			
Strand 3—Analyzing, Investigating, & Addressing Environmental Issues **3.1—Skills for Analyzing and Investigating Environmental Issues**			
A. Identify and investigate local environmental issues.			
B. Speculate about and explore the social, economic, and environmental consequences of issues and proposed solutions to them.			
C. Identify and evaluate alternative approaches to resolving issues.			
D. Discuss and critique ideas representing different perspectives; hear and respect viewpoints that differ from their own.			

Check the appropriate column to indicate the degree to which your program(s) address each item. **Our program provides K-4 students with learning experiences so that by the time they finish 4th grade they are able to. . .**	Yes - fully addressed	Partly addressed	No - not addressed
3.2—Decision-Making and Citizenship Skills			
A. Examine and express their own views on environmental issues.			
B. Consider whether they believe action is needed in particular situations and whether they think they should be involved.			
C. Learn the basics of individual and collective action, by participating in close-to-home issues of their choosing.			
D. Evaluate the results of actions, understanding that civic actions have consequences.			
Strand 4—Personal and Civic Responsibility			
A. Identify the fundamental principles of U.S. society and explain their importance in the context of environmental issues.			
B. Understand the basic rights and responsibilities of citizenship.			
C. Possess a realistic self-confidence in their effectiveness as citizens.			
D. Understand that they have responsibility for the effects of their actions.			

Excellence in Environmental Education—Guidelines for Learning
5th-8th Grade Self Assessment Tool

PLEASE NOTE: For more detailed information about the guidelines briefly listed below, see pages 29-50 of *Excellence in Environmental Education—Guidelines for Learning (K-12)* produced by the North American Association for Environmental Education.

Check the appropriate column to indicate the degree to which your program(s) address each item. **Our program provides 5th-8th grade students with learning experiences so that by the time they finish 8th grade they are able to. . .**	Yes - fully addressed	Partly addressed	No - not addressed
Strand 1—Questioning and Analysis Skills			
A. Develop, focus, and explain questions that help them learn about the environment and do environmental investigations.			
B. Design environmental investigations to answer particular questions—often their own questions.			
C. Locate and collect reliable information about the environment or environmental topics using a variety of methods and sources.			
D. Evaluate the strengths and weaknesses of the information they are using.			
E. Classify and order data, and organize and display information in ways that help analysis and interpretation.			
F. Understand many of the uses and limitations of models.			
G. Synthesize their observations and findings into coherent explanations.			
Strand 2—Knowledge of Environmental Processes and Systems **2.1—The Earth as a Physical System**			
A. Understand the basics of most of the physical processes that shape the Earth, and relate differences in physical patterns to their causes.			
B. Understand the properties of the substances that make up objects or materials found in the environment.			
C. Begin to grasp formal concepts related to energy by focusing on energy transfer and transformations, and make connections among phenomena such as light, heat, magnetism, electricity, and the motion of objects.			

Check the appropriate column to indicate the degree to which your program(s) address each item. **Our program provides 5th-8th grade students with learning experiences so that by the time they finish 8th grade they are able to. . .**	Yes - fully addressed	Partly addressed	No - not addressed
2.2—The Living Environment			
A. Understand that biotic communities are made up of plants and animals that are uniquely adapted to live in particular environments.			
B. Understand and describe the importance of genetic variation in species and possible implications of species extinction.			
C. Understand major kinds of interactions among organisms or populations of organisms.			
D. Understand how energy and matter flow among the abiotic and biotic components of the environment.			
2.3—Humans and Their Societies			
A. Understand that how individuals perceive the environment is influenced in part by individual traits and group membership or affiliation.			
B. Gain an understanding of cultural perspectives on the environment and how the environment may, in turn, influence culture, as they become familiar with a wider range of cultures and subcultures.			
C. Become more familiar with political and economic systems and how these systems take the environment into consideration.			
D. Identify and explain ways in which the world's environmental, societal, economic, cultural, and political systems are linked.			
E. Understand that human systems change over time and that conflicts sometimes arise over differing viewpoints about the environment.			

Check the appropriate column to indicate the degree to which your program(s) address each item. **Our program provides 5th-8th grade students with learning experiences so that by the time they finish 8th grade they are able to. . .**	Yes - fully addressed	Partly addressed	No - not addressed
2.4—Environment and Society			
A. Understand that human-caused changes have consequences for the immediate environment as well as for other places and future times.			
B. Describe, analyze, and make inferences about the characteristics of various places, and explore differences in perceptions and importance of places close to home and around the world.			
C. Understand that uneven distribution of resources around the world influences their use and perceived value.			
D. Link the human ability to shape and control the environment with our ability to create knowledge and develop new technologies.			
E. Describe a range of environmental issues at scales that range from local to national to global, and understand that people in other places around the world share many of the same issues they are concerned about locally.			
Strand 3—Analyzing, Investigating, and Addressing Environmental Issues **3.1—Skills for Analyzing and Investigating Environmental Issues**			
A. Use primary and secondary sources of information, and apply their growing research and analytical skills to investigate environmental issues, beginning with those in their own community.			
B. Apply their knowledge of ecological and human processes and systems to identify the consequences of specific environmental issues.			
C. Identify and develop action strategies for addressing particular issues.			
D. Consider the assumptions and interpretations that influence the conclusions they and others draw about environmental issues.			

Check the appropriate column to indicate the degree to which your program(s) address each item. **Our program provides 5th-8th grade students with learning experiences so that by the time they finish 8th grade they are able to. . .**	Yes - fully addressed	Partly addressed	No - not addressed
3.2—Decision-Making and Citizenship Skills			
A. Identify, justify, and clarify their views on environmental issues and alternative ways to address them.			
B. Evaluate whether they believe action is needed in particular situations, and decide whether they should be involved.			
C. Begin to see themselves as citizens taking active roles in their communities; plan for and engage in citizen action at levels appropriate to their maturity and preparation.			
D. Evaluate the effects of their own actions and actions taken by other individuals and groups.			
Strand 4—Personal and Civic Responsibility			
A. Understand that societal values can be both a unifying and a divisive force.			
B. Understand the rights and responsibilities of citizenship and their importance in promoting the resolution of environmental issues.			
C. Possess a realistic self-confidence in their effectiveness as citizens.			
D. Understand that their actions can have broad consequences and that they are responsible for those consequences.			

Excellence in Environmental Education—Guidelines for Learning
9th-12th Grade Self Assessment Tool

PLEASE NOTE: For more detailed information about the guidelines briefly listed below, see pages 51-74 of *Excellence in Environmental Education—Guidelines for Learning (K-12)* produced by the North American Association for Environmental Education.

Check the appropriate column to indicate the degree to which your program(s) address each item. **Our program provides 9th-12th grade students with learning experiences so that by the time they finish 12th grade they are able to. . .**	Yes - fully addressed	Partly addressed	No - not addressed
Strand I—Questioning and Analysis Skills			
A. Develop, modify, clarify, and explain questions that guide environmental investigations of various types, and identify factors that influence the questions they pose.			
B. Design investigations to answer particular questions about the environment—even developing approaches for investigating unfamiliar types of problems and phenomena.			
C. Locate and collect reliable information for environmental investigations of many types. Know how to use sophisticated technology to collect information, including computer programs designed to address, gather, store, and display data.			
D. Apply basic logic and reasoning skills to evaluate completeness and reliability in a variety of information sources.			
E. Organize and display information in ways appropriate to different types of environmental investigations and purposes.			
F. Create, use, and evaluate models to understand environmental phenomena.			
G. Use evidence and logic in developing proposed explanations that address their initial questions and hypotheses.			

Check the appropriate column to indicate the degree to which your program(s) address each item. **Our program provides 9th-12th grade students with learning experiences so that by the time they finish 12th grade they are able to. . .**	Yes - fully addressed	Partly addressed	No - not addressed
Strand 2—Knowledge of Environmental Processes and Systems **2.1—The Earth as a Physical System**			
A. Understand the major physical processes that shape the Earth; relate these processes, especially large-scale and long-term ones, to characteristics of the Earth's surface.			
B. Apply their understanding of chemical reactions to round out their explanations of environmental characteristics and everyday phenomena.			
C. Apply their knowledge of energy and matter to understand phenomena in the world around them.			
2.2—The Living Environment			
A. Understand basic population dynamics and the importance of diversity in living systems.			
B. Understand the basic ideas and genetic mechanisms behind biological evolution.			
C. Understand the living environment to be comprised of interrelated, dynamic systems.			
D. Account for environmental characteristics based on their knowledge of how matter and energy interact in living systems.			
2.3—Humans and Their Societies			
A. Understand the influence of individual and group actions on the environment and comprehend how groups can work to promote and balance interests.			
B. Understand cultural perspectives and dynamics and apply their understandings to particular contexts.			
C. Understand how different political and economic systems account for, manage, and affect natural resources and environmental quality.			
D. Analyze global social, cultural, political, economic, and environmental linkages.			

Check the appropriate column to indicate the degree to which your program(s) address each item. **Our program provides 9th-12th grade students with learning experiences so that by the time they finish 12th grade they are able to. . .**	Yes - fully addressed	Partly addressed	No - not addressed
E. Understand the functioning of public processes for promoting and managing change and conflict, and analyze their effects on the environment.			
2.4—Environment and Society			
A. Understand that humans are able to alter the physical environment to meet their needs and that there are limits to the ability of the environment to absorb impacts or meet human needs.			
B. Understand "place" as humans endowing a particular part of the Earth with meaning through their interactions with that environment.			
C. Understand that the importance and use of resources change over time and vary under different economic and technological systems.			
D. Examine the social and environmental impacts of various technologies and technological systems.			
E. Converse, write about, and evaluate environmental issues at scales that range from local to national to global; understand that these scales and issues are often linked.			
Strand 3—Analyzing, Investigating, and Addressing Environmental Issues **3.1—Skills for Analyzing and Investigating Environmental Issues**			
A. Apply their research and analytical skills to investigate environmental issues ranging from local issues to those that are regional or global in scope.			
B. Evaluate the consequences of specific environmental changes, conditions, and issues for human and ecological systems.			
C. Identify and propose action strategies that are likely to be effective in particular situations and for particular purposes.			
D. Engage each other in peer review conducted in the spirit of open inquiry, knowing that environmental issues investigations can bring to the surface deeply held views.			

Check the appropriate column to indicate the degree to which your program(s) address each item. **Our program provides 9th-12th grade students with learning experiences so that by the time they finish 12th grade they are able to. . .**	Yes - fully addressed	Partly addressed	No - not addressed
3.2—Decision-Making and Citizenship Skills			
A. Communicate, evaluate, and justify their own views on environmental issues and alternative ways to address them.			
B. Decide whether action is needed in particular situations, and whether they should be involved.			
C. Plan for action based on their research and analysis of an environmental issue and if appropriate, take actions that are within the scope of their rights and consistent with their abilities and responsibilities as citizens.			
D. Evaluate the effects of their own actions and actions taken by other individuals and groups.			
Strand 4—Personal and Civic Responsibility			
A. Analyze the influence of shared and conflicting societal values.			
B. Understand the importance of exercising the rights and responsibilities of citizenship.			
C. Possess a realistic self-confidence in their effectiveness as citizens.			
D. Understand that their actions can have broad consequences and accept responsibility for recognizing those effects and changing their actions when necessary.			

Pulling It All Together

Now that you have completed the checklist(s) appropriate for your program(s), what do you know? Take a few minutes to tally the results of your self assessment in the table provided below. This should provide you with an overview of the results of your self assessment.

Self Assessment Summary **Directions**: Starting with Strand 1 on your first checklist, add up the total number of check marks for each of the three columns: Yes-fully addressed, Partly addressed, No-not addressed. Enter the total number in the appropriate column. If you have assessed programs for additional grade levels, also complete a summary for them using the same procedure.	**Grade 4 Total**			**Grade 8 Total**			**Grade 12 Total**		
	Yes - fully addressed	Partly addressed	No - not addressed	Yes - fully addressed	Partly addressed	No - not addressed	Yes - fully addressed	Partly addressed	No - not addressed
Strand 1—Questioning and Analysis Skills (7 guidelines)									
Strand 2—Knowledge of Environmental Processes and Systems									
2.1—The Earth as a Physical System (3 guidelines)									
2.2—The Living Environment (4 guidelines)									
2.3—Humans and Their Societies (5 guidelines)									
2.4—Environment and Society (5 guidelines)									
Strand 3—Analyzing, Investigating, and Addressing Environmental Issues									
3.1—Skills for Analyzing and Investigating Environmental Issues (4 guidelines)									
3.2—Decision-Making and Citizenship Skills (4 guidelines)									
Strand 4—Personal and Civic Responsibility (4 guidelines)									

By examining the results of your self assessment you should be in a better position to identify those guidelines that are fully addressed by your program(s) and those that are not. Further, if you completed more than one of the checklists, you should have a clearer idea of the strengths of your program across different grade levels. This assessment is meant to be used as a diagnostic tool to help you gauge how far you have come in providing your students with a comprehensive environmental education program. Hopefully, you are now in a better position to develop programs and/or partnerships that will help you reach all of your environmental education goals.

What does it mean to be environmentally literate? The National Project for Excellence in Environmental Education, initiated by the North American Association for Environmental Education (NAAEE) in 1993, is attempting to answer that question. Environmental education is a process that aims to develop an environmentally literate citizenry that can compete in our global economy, has the skills, knowledge, and inclinations to make well-informed choices, and exercises the rights and responsibilities of members of a community.

The National Project for Excellence in Environmental Education

Publications

The National Project for Excellence in Environmental Education publications include:

1. *The NAAEE Standards Project: Papers on the Development of Environmental Education Standards* (1995), working documents that provided background research for the project.

2. *Environmental Education Materials: Guidelines for Excellence* (1996), a set of recommendations for developing and selecting environmental education materials.

3. *The Environmental Education Collection—A Review of Resources for Educators, Volume 1* (1997), a resource guide to help educators find curricula, multimedia resources, and other educational materials that can enhance teaching environmental education in a variety of settings.

4. *The Environmental Education Collection—A Review of Resources for Educators, Volume 2* (1998).

5. *The Environmental Education Collection—A Review of Resources for Educators, Volume 3* (1998).

6. *Excellence in Environmental Education—Guidelines for Learning (K-12)*, guidance for fostering and gauging environmental literacy in kindergarten through twelfth grade (1999).

7. *Excellence in Environmental Education—Guidelines for Learning (K-12) Executive Summary and Self Assessment Tool* (1999).

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